

Claims:

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(1) A method for the production of acrylic acid or acrolein, characterized by gasifying liquefied propylene and/or propane introduced into an evaporator by supplying a liquid coolant to the evaporator and, at the same time, preparing a chilled coolant by recovering the latent heat of the liquefied propylene and/or propane, subjecting the resultant gasified propane and/or propylene to a catalytic gas phase oxidation reaction thereby preparing a gas containing acrylic acid or acrolein, and using said chilled coolant in heat exchangers attached to the apparatus for the production acrylic acid or acrolein.

(2) A method according to claim 1, wherein the temperature of said liquid coolant supplied to said evaporator is in the range of 0 - 50°C.

(3) A method according to claim 1, wherein said liquid coolant is water or brine.

(4) A method according to claims 1, where in said heat exchanger is at least one member selected from the group consisting of an absorbing solvent cooler and a circulation cooler attached to the acrylic acid absorbing column, a condenser attached to the solvent separating column, and a condenser attached to the acrylic acid refining column.

(5) A method according to claims 1, wherein said chilled coolant is used in heat exchangers attached to a methacrylic acid and/or (meth)acrylic esters plant.

(6) A method according to claims 1, wherein the chilled coolant which has been used in said heat exchangers is reused as a liquid coolant.

(7) A method according to claims 1, wherein the amount of said liquefied propylene and/or propane to be gasified is adjusted by controlling the amount of said liquid coolant

into the evaporator.

See (8) An apparatus for the production of acrylic acid or acrolein, comprising means for gasifying liquefied propylene and/or propane introduced into an evaporator by supplying
5 a liquid coolant to said evaporator and, at the same time, preparing a chilled coolant by recovering the latent heat of the liquefied propylene and/or propane, means for subjecting the resultant gasified propylene and/or propane to a catalytic gas phase oxidation reaction thereby preparing
10 a gas containing acrylic acid or acrolein, and means for using said chilled coolant in heat exchangers attached to the apparatus for the production of acrylic acid or acrolein.

(9) An apparatus according to claim 8, wherein said means for preparing said chilled coolant includes means for
15 adjusting the temperature of said liquid coolant or means for adjusting the flow amount thereof.

(10) An apparatus according to claim 8, which further comprises means for circulating the chilled coolant used in said heat exchangers to said means for preparing said chilled
20 coolant.

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